

1 / 28

CTCGAGGACAGTGACCTGGGAGTGAGTACAAGGTGAGGCCACCACTCAGGGT
GCCAGCTCCAAGCGGGTCACAGGGACGAGGGCTGCAGGCCATCAGGAGGCCCT
GCACACACATCTGGGACACCGCGCCCCCGAGGGCCAGTTCACCTCAGTGCAGCC
TCATTCTCCTGCACAAAAGCGCCCCCATCCTTCTTCACAAGGCTTCGTGG
AAGCAGAGGCAGTCGATGCCAGTACCCCTCTCCCTTCCCAGGCAACGGGACC
CCAAGTTGCTGACTGGGACCAAGCCACGCATGCGTCAAGAGTGAGAGT
CCGGGACCTAGGCAGGGGCTGGGTTGGGCCTGAGAGAGAAGAGAACCTC
CCCCAGCAGTCGGTGTGCATCGGTAGTGAAGGGAGCCTCACCTGACCCCCGCT
GTTGCTCAATCGACTTCCAAAGAACAGAGAGAAAAGGAAACTTCCAGGGCGG
CCCAGGCTCCTGGGGTTCCCACCCATTAGCTGAAAGCACTGAGGCA
GAGCTCCCCCTACCCAGGCTCCACTGCCCGCACAGAAATAACAACCAACGGT
TACTGATCATCTGGGAGCTGTCCAGGAATT

FIG._1A

1 GCTGGGCTAA ACTGGGCTAG CCTGAGCTGG GCTGAACCTGG GCTGCTGGG
51 TGGACTGGGT AAGCTGGGCT GAGCTGGGTT GGGTGGAAAT GGGCTGAGCT
101 GAGCTAGGCT AAACTGGGTT TGGCTGGGCT GGGCTGGGCT GGG

FIG._2B

1 GGTTTGGCTG GGCTGGGCTG GGCTGGGCTG GGTCAGCTG AGCGGGTTGG
51 GTTAGACTGG GTCAAACCTGG TTCAGC

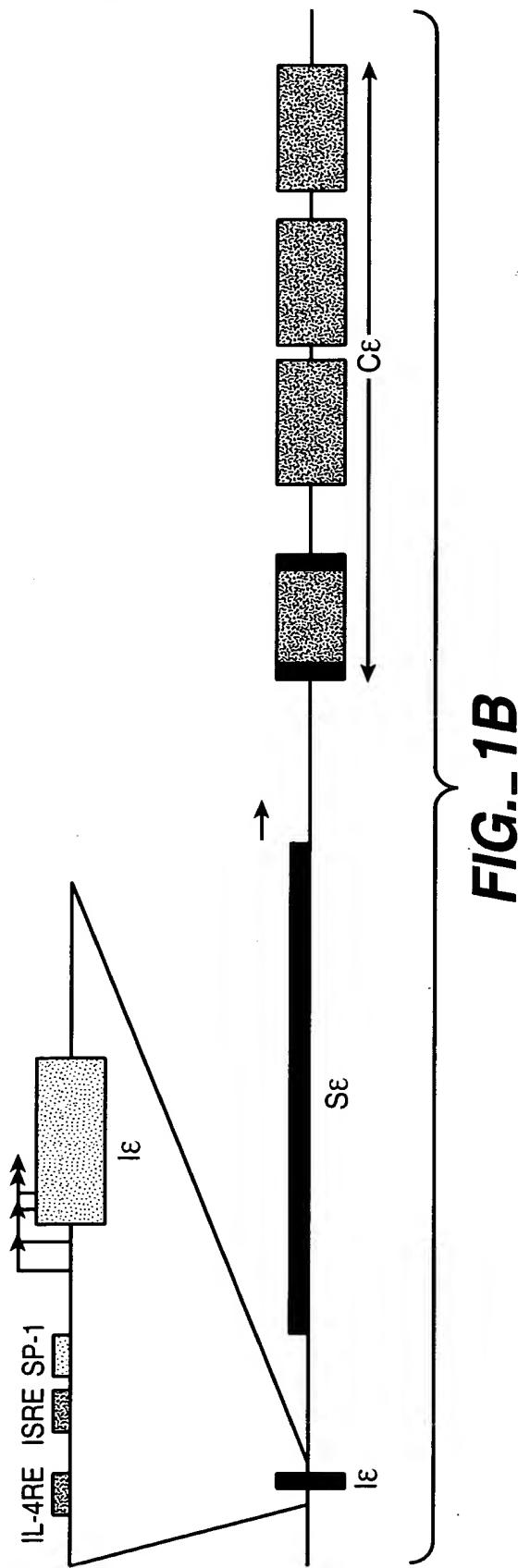
FIG._2C

209770 92699660

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2 / 28

GERMLINE & LOCUS



209470-9469660
LOW ENERGY DNA FOLDING OF THE S ϵ REGION

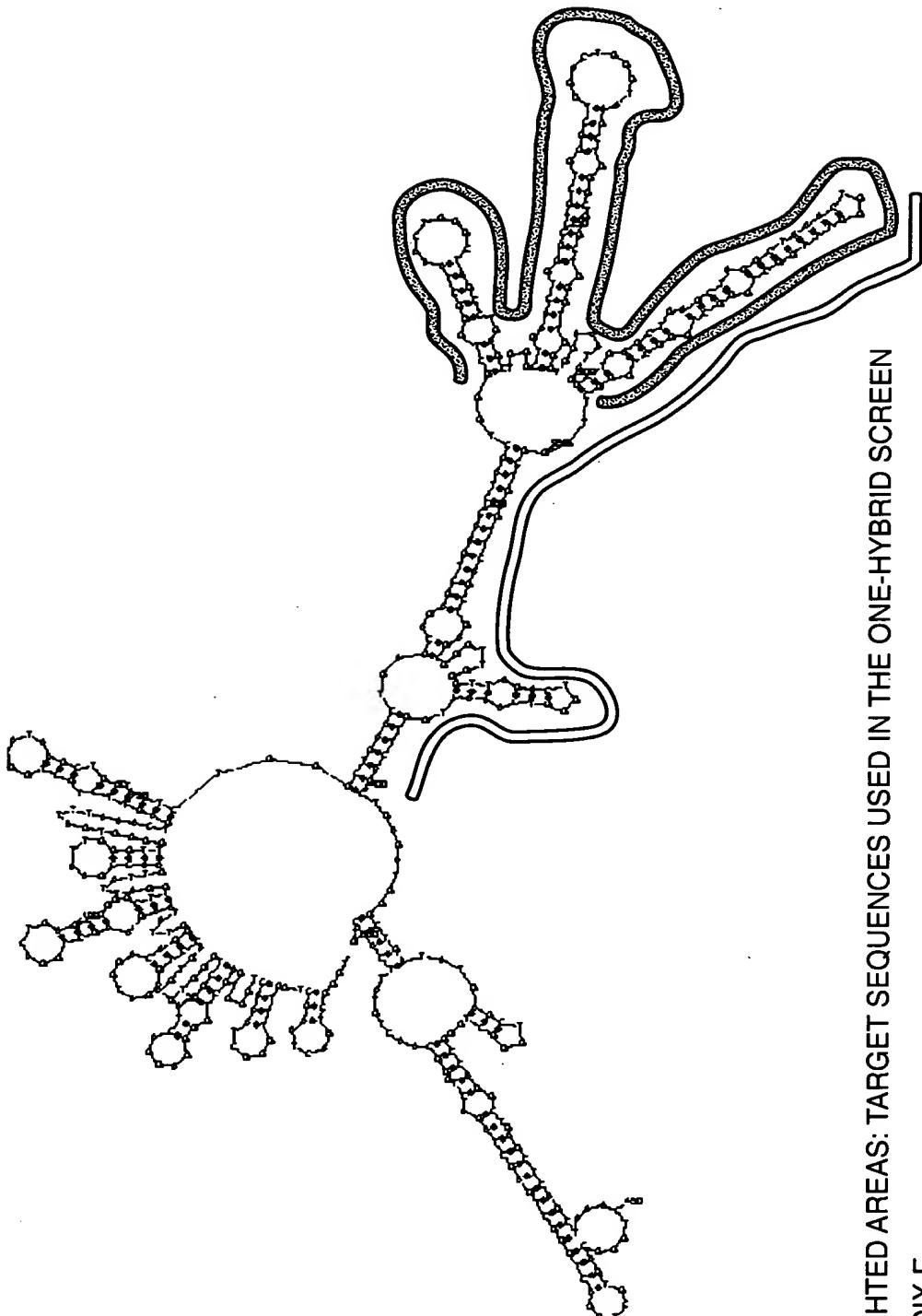
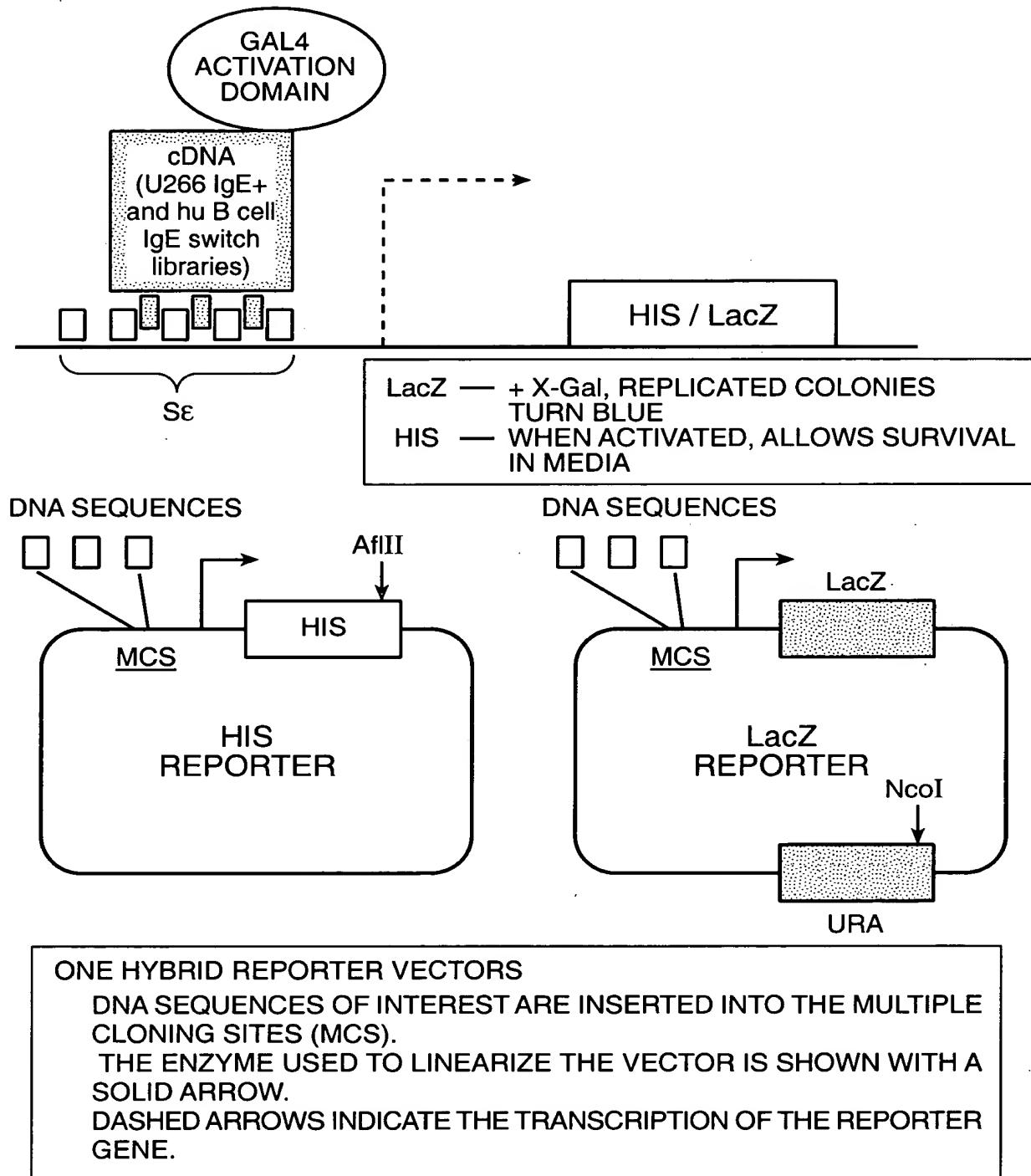


FIG.-2A

YEAST ONE-HYBRID SCREENING

**FIG._3**

IL-4 INDUCTION OF GERMLINE ϵ mRNA IN THE
IgM + B CELL LINES: CA-46, MC-116 AND DND39

DND39 + IL-4

DND39 - IL-4

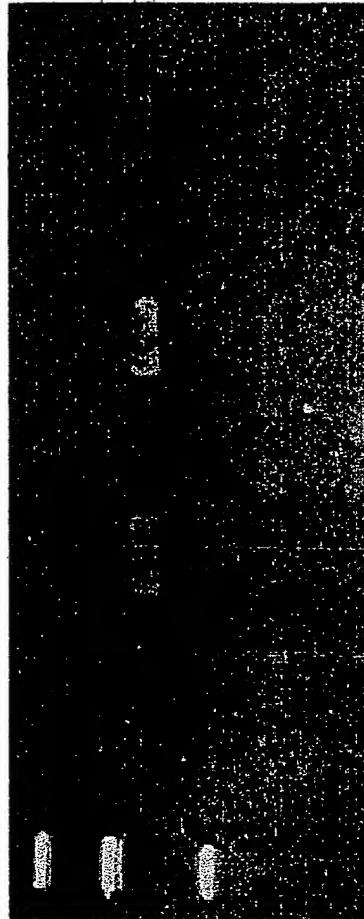
MC-116 + IL-4

MC-116 - IL-4

CA-46 + IL-4

CA-46 - IL-4

NEG. CONT.



246 bp

123 bp

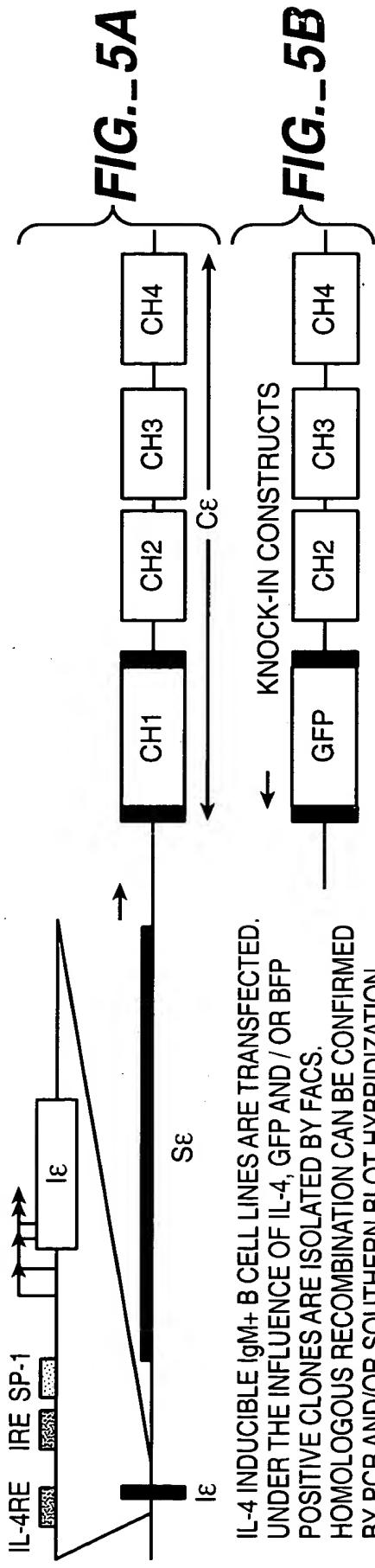
CELLS WERE INCUBATED FOR 48 HRS. IN 300 U / ml OF h-IL-4.

RT-PCR WAS PERFORMED USING PRIMERS SPECIFIC FOR THE GERMLINE ϵ EXON AND THE 5'-END OF THE C ϵ CH1 EXON (PREDICTED SIZE ~ 200 bp).

APPENDIX G

FIG._4

BEST AVAILABLE COPY

APPROACHES TO GENERATE GERMLINE ϵ PROMOTER KNOCK-IN REPORTER CELL LINES

IL-4 INDUCIBLE IgM+ B CELL LINES ARE TRANSFECTED UNDER THE INFLUENCE OF IL-4, GFP AND / OR BFP. POSITIVE CLONES ARE ISOLATED BY FACS. HOMOLOGOUS RECOMBINATION CAN BE CONFIRMED BY PCR AND/OR SOUTHERN BLOTH HYBRIDIZATION.

IL-4 INDUCIBLE ϵ IgM+ B CELL LINES ARE TRANSFECTED AND SELECTED WITH G418. SURVIVORS ARE SORTED FOR THE LACK OF 3' BFP EXPRESSION (DELETED DURING HOMOLOGOUS RECOMBINATION). RT-PCR IS PERFORMED TO CONFIRM HOMOLOGOUS RECOMBINATION. THOSE CLONES ARE TRANSFECTED WITH *cre* TO REMOVE THE NEOMYCIN RESISTANCE GENE.

FIG. 5B

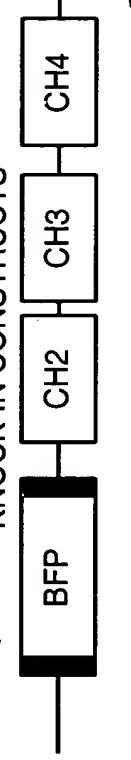
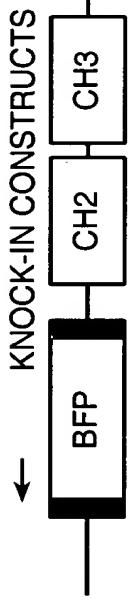
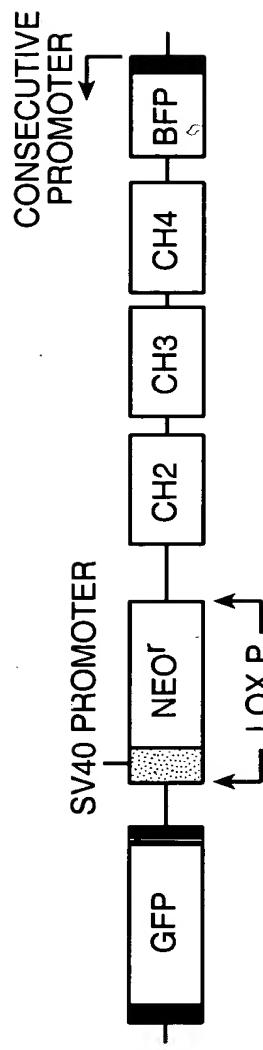
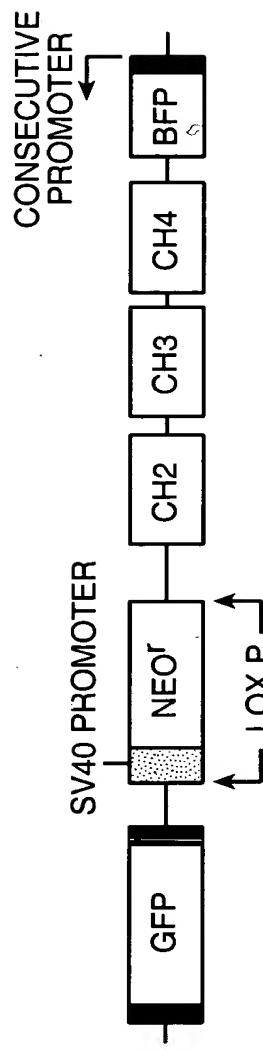


FIG. 5C

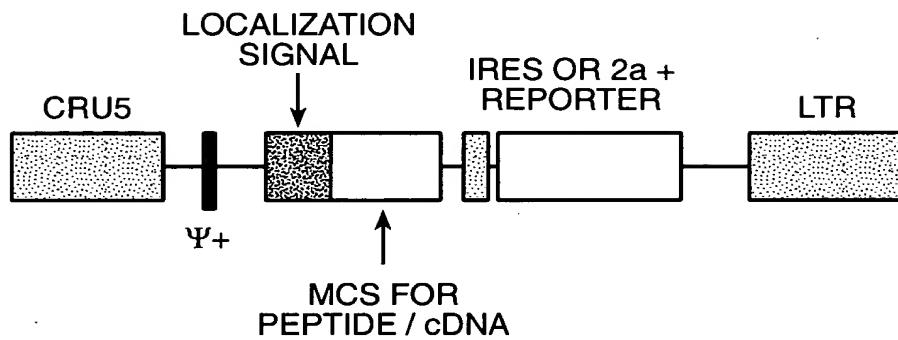


IL-4 RE, IL-4 RESPONSIVE ELEMENT
IRE, INTERFERON RESPONSIVE ELEMENT
SP-1, SP-1 BINDING SITE
 ϵ , NON-TRANSLATED EXON
SE, SWITCH REGION OF ϵ
GFP, GREEN FLUORESCENT PROTEIN
BFP, BLUE FLUORESCENT PROTEIN
CH 1, 2, 3, 4, CONSTANT REGION DOMAIN EXONS

APPENDIX A



RIGEL BASE VECTOR



ALL COMPONENTS ARE UNIQUELY CASSETTED FOR FLEXIBILITY

CRU5, MODIFIED LTR
LTR, LONG TERMINAL REPEAT
 $\Psi+$, PACKING SIGNAL
LOCALIZATION SIGNAL: NUCLEAR, CELL MEMBRANE, GRANULAR
MCS, MULTIPLE CLONING SITE
IRES, INTERNAL RIBOSOME ENTRY SITE
2a, SELF-CLEAVING PEPTIDE

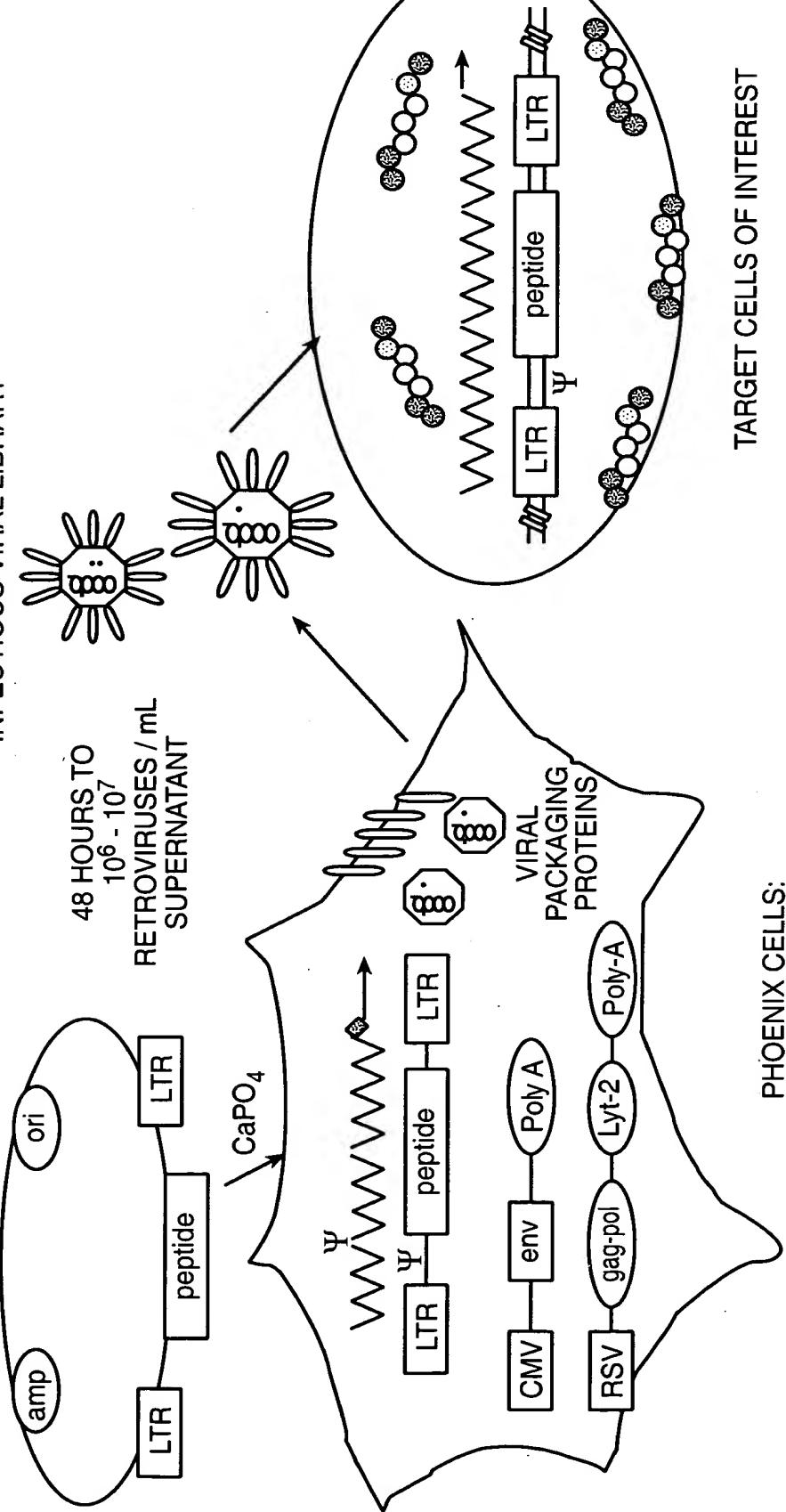
APPENDIX I

FIG._6

2051710 926991560

PROTOCOL FOR TRANSFECTION OF PHOENIX CELLS
AND INFECTION OF NONADHERENT TARGET CELLS

INFECTIOUS VIRAL LIBRARY



APPENDIX I

TARGET CELLS OF INTEREST

PHOENIX CELLS:
LIBRARY PACKAGING CELL LINE

FIG. 7

ε HEAVY CHAIN GFP / BFP KNOCK-IN CELL LINE
U266 ε HEAVY CHAIN

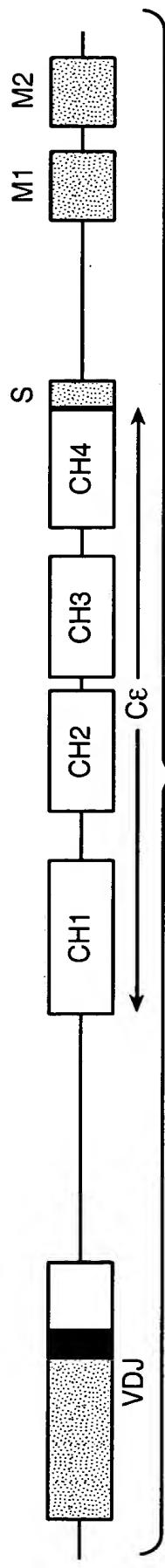
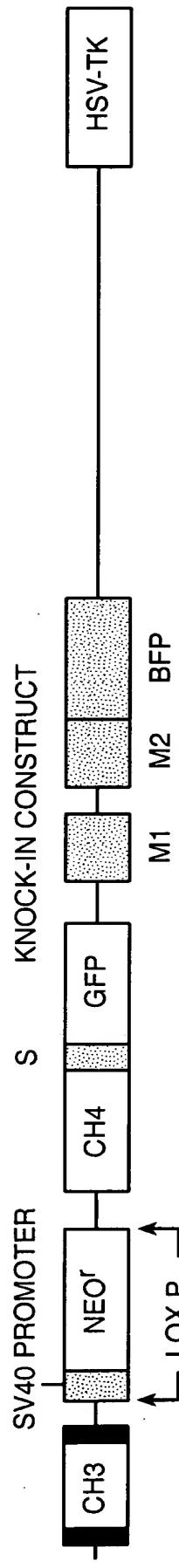


FIG.-8A



SV40 PROMOTER S KNOCK-IN CONSTRUCT

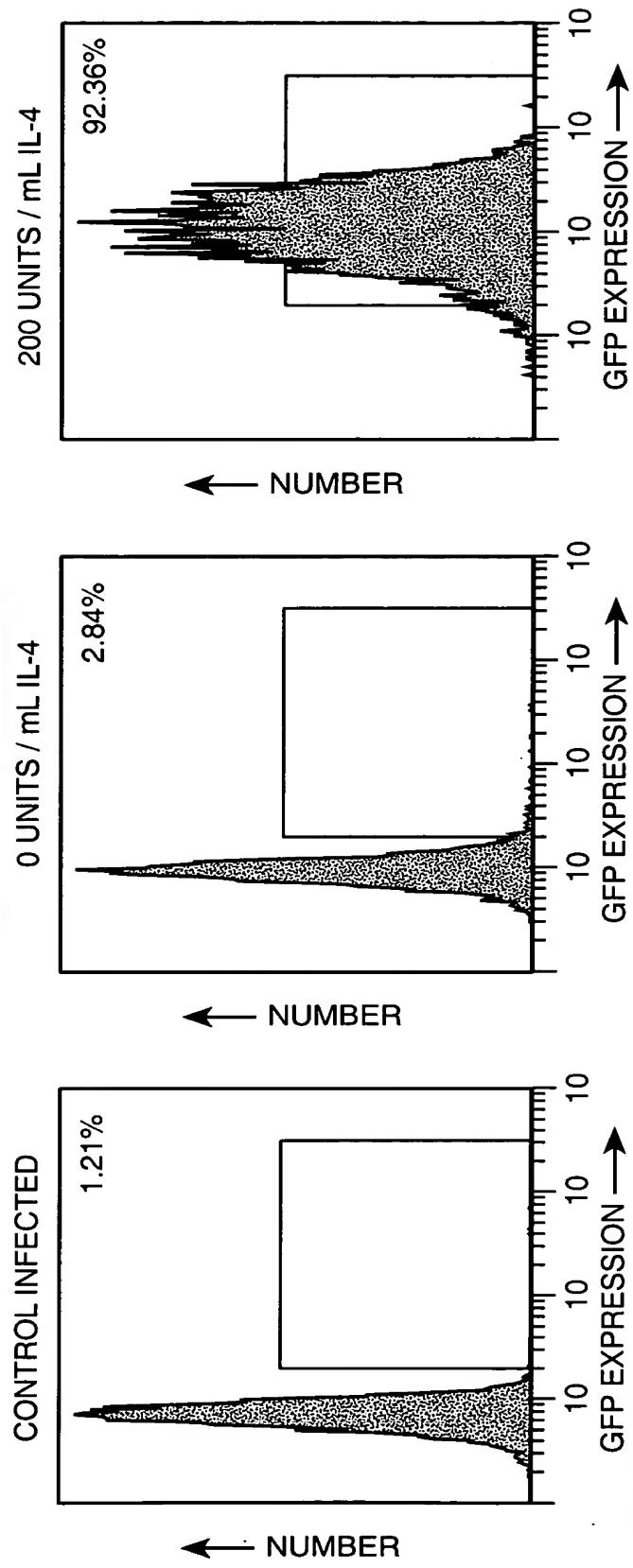
S, SECRETORY EXON
GFP, GREEN FLUORESCENT PROTEIN
BFP, BLUE FLUORESCENT PROTEIN
Neo', NEOMYCIN RESISTANCE GENE
VDJ, V REGION EXON
CH 1, 2, 3, 4, CONSTANT REGION DOMAIN EXONS
M1, M2, MEMBRANE EXONS
HSV-TK, HERPES SIMPLEX VIRUS-THYMIDINE KINASE

U266 CELLS ARE TRANSFECTED AND SELECTED WITH G418. SURVIVORS ARE TREATED WITH GANCICLOVIR (HSV-TK DELETED DURING HOMOLOGOUS RECOMBINATION). RT-PCR IS PERFORMED TO CONFIRM HOMOLOGOUS RECOMBINATION. THOSE CLONES ARE TRANSFECTED WITH *cre* TO REMOVE THE SV40 NEOMYCIN RESISTANCE GENE.

APPENDIX D

FIG.-8B

IL-4 INDUCIBLE & PROMOTER REPORTER CELL LINE

REPORTER CONSTRUCTIL-4 INDUCED REPORTER

APPENDIX C

FIG._9A

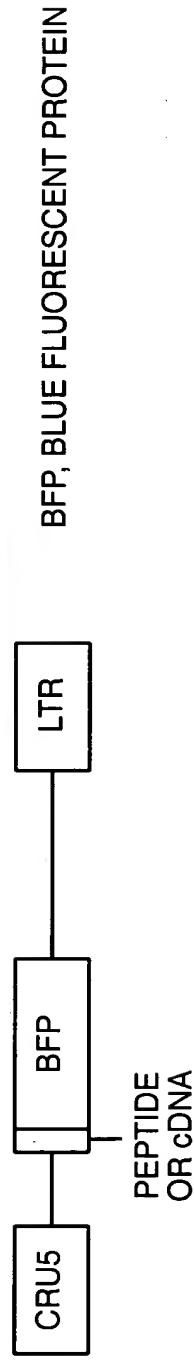
200710091659660

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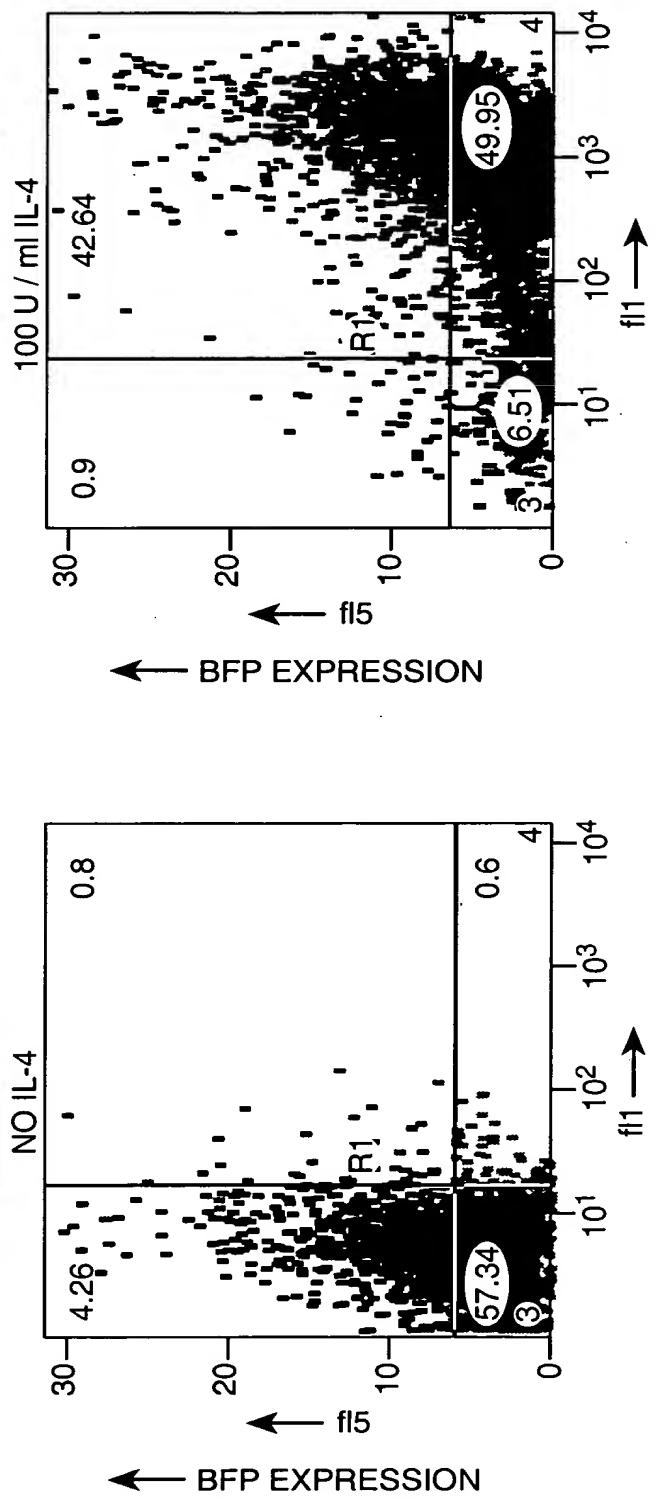
11 / 28

REPORTER LINE INFECTED WITH BFP CONSTRUCT

LIBRARY CONSTRUCT



FACS PROFILE OF CELLS WITH BOTH REPORTER AND PEPTIDE LIBRARY

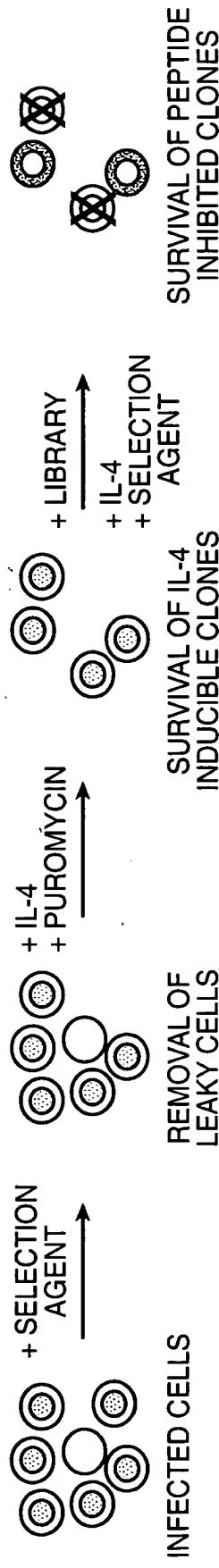


APPENDIX C

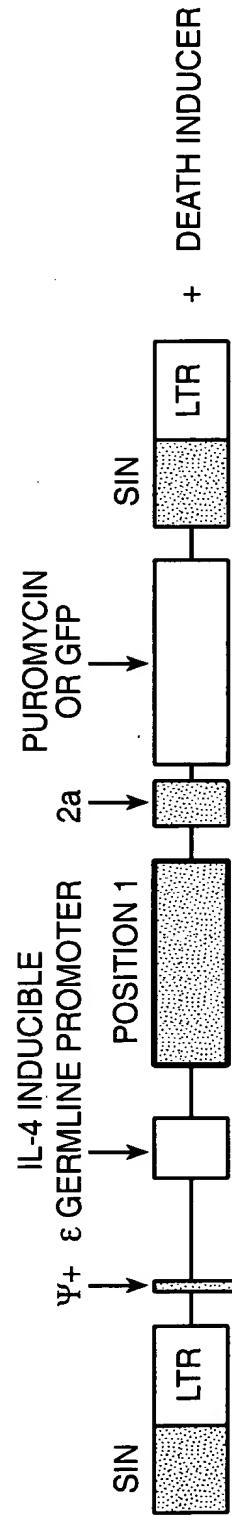
GFP EXPRESSION →

GFP EXPRESSION →

FIG._9B

SCREEN FOR PEPTIDE INHIBITORS OF THE GERMLINE ϵ PROMOTER

SURVIVAL CONSTRUCT

POSITION 1

FAS CHIMERIC RECEPTOR*

*(MOUSE FAS/CD8 EXTERNAL + HUMAN INTERNAL
AND CYTOPLASMIC DOMAINS)

SIN, SELF-INACTIVATING LTR
LTR, LONG TERMINAL REPEAT

HSV-TK
P450 2B1
p21 PEPTIDE

ALL COMPONENTS ARE CASSETTED FOR FLEXIBILITY

SELECTION AGENT

oFAS

GANCICLOVIR
CYCLOPHOSPHAMIDE

NONE (SELF SELECTION)

APPENDIX D

FIG._ 10

13 / 28

1-845 CMV promoter/R/U5 5' LTR
 1322 GAG ATG-ATC mutation
 850-2100 extended Ψ region
 2146-2173 two BstX1 peptide cloning sites
 2205-2723 ECMV IRES (cloned as EcoR1/Msc1 fragment from
 DCITE-4a [Novagen])
 2746-3465 GFP coding region
 3522-4115 3' LTR
 4122-6210 pGEM backbone (pUC origin, ampR)

ATCACGAGGCCCTTCGTCTTCAAGAACAGCTTGCTCTAGGAGTTCTAAATACATCC
 CAAACTCAAATATATAAAGCATTGACTTGTCTATGCCCTAGTTATTAATAGTAATCAA
 TTACGGGGTCATTAGTCATAGCCCATAATGGAGTTCCGCGTACATAACTACGGTAA
 ATGGCCCGCCTGGCTGACCGCCAACGACCCCCGCCCATTGACGTCAATAATGACGTATG
 TTCCCATAGTAACGCCAATAGGGACTTCCATTGACGTCAATGGGTGGAGTATTACGGT
 AAAC TGCCCACCTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCTATTGACG
 TCAATGACGGTAAATGGCCCGCCTGGCATTATGCCAGTACATGACCTTATGGGACTTTC
 CTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTTTGGC
 AGTACATCAATGGCGTGGATAGCGGTTGACTCACGGGATTCCAAGTCTCCACCCCA
 TTGACGTCAATGGAGTTGGCACCAAAATCAACGGACTTCCAAAATGTCGTA
 ACAACTCCGCCCAATTGACGCAAATGGCGGTAGGCATGTACGGTGGGAGGTCTATATAA
 GCAGAGCTCAATAAGAGCCCACAACCCCTCACTCGGGCGCCAGTCCCTCGATTGACT
 GAGTCGCCCGGGTACCGTGTATCCAATAACCCCTTTGCAGTTGCATCCGACTTGTGGT
 CTCGCTGTTCTGGGAGGGTCTCTGAGTGTATTGACTACCCGTAGCGGGGGTCTTT
 CATTGGGGGCTCGTCCGGATCGGAGACCCCTGCCAGGGACCACCGACCCACCC
 GGAGGTAAGCTGCCAGCAACTATCTGTCTGTCCGATTGTCTAGTGTCTATGACTGA
 TTTTATGCGCCTGCGTCGGTACTAGTTAGCTAACTAGCTCTGTATCTGGCGACCCGTGG
 TGGAACTGACGAGTTCGGAACACCCGGCGCAACCCCTGGGAGACGTCCCAGGGACTTCGG
 GGGCCGTTTGTGGCCGACCTGAGTCCAAAATCCGATCGTTGGACTCTTGGT
 CACCCCTTAGAGGGAGATATGTGGTTCTGGTAGGAGACGAGAACCTAAACAGTTCC
 CGCCTCCGTCTGAATTGGCTTCCGGTTGGGACCAGCCGCGCCGCGTCTGTCT
 GCTGCAGCATCGTCTGTGTTCTGTACTGTGTTCTGTATTGTCTGAAAATA
 TCGGCCGGGCCAGACTGTTACCACTCCCTTAAGTTGACCTAGGTCACTGGAAAGATG
 TCGAGCGGATCGCTCACACCAGTGGTAGATGTCAAGAAGAGACGTTGGTTACCTTCT
 GCTCTGCAGAATGGCAAACCTTAACGTCGGATGGCCGCGAGACGGCACCTTAACCGAG
 ACCTCATCACCCAGGTTAAGATCAAGGTCTTACCTGGCCCGCATGGACACCCAGACC
 AGGTCCCCTACATCGTGACCTGGGAAGCCTTGGCTTGAACCCCTCCCTGGTCAAGC
 CCTTGTACACCTAACGCTCCGCCCTCTTCCATCCGCCCGTCTCTCCCCCTTG
 AACCTCCTCGTTCGACCCGCCCTCGATCCTCCCTTATCCAGCCCTCACTCCTCT
 GCGCCCCCATATGCCATATGAGATCTTATATGGGGACCCCCCGCCCTGTAAACTTCC
 CTGACCCCTGACATGACAAGAGTTACTAACAGCCCTCTCCAGCTCACTTACAGGCTC
 TCTACTTAGTCCAGCACGAAGTCTGGAGACCTCTGGCGCAGCCTACCAAGAACAACTGG
 ACCGACCGGGTGGTACCTCACCCCTACCGAGTCGGCGACACAGTGTGGGTCCGCCGACACC
 AGACTAAGAACCTAGAACCTCGCTGGAAAGGACCTTACACAGTCCCTGCTGACCACCCCA
 CCGCCCTCAAAGTAGACGGCATCGCGCTTGGATACACGCCGCCACGTGAAGGCTGCCGA
 CCCCGGGGGTGGACCATCCTCTAGACTGCCGGATCTGAGGGATCCACCAACCATGGACCC
 CCATTAATTGGAATTCTGCAGCCCAGGGATCCACTAGTTCTAGAGCGAATTAAATTCC

FIG._ 11A-1

GGTTATTTCCACCATATTGCCGTCTTGGCAATGTGAGGGCCCGGAAACCTGGCCCTG
 TCTTCTTGACGAGCATCCTAGGGTCTTCCCTCTGCCAAAGGAATGCAAGGTCTGT
 TGAATGTCGTGAAGGAAGCAGTCCTCTGGAAGCTTCTGAAGACAAACACGTCTGTAG
 CGACCCCTTGCAGGCAGCGGAACCCCCCACCTGGCGACAGGTGCCCTCGCGGCCAAAGC
 CACGTGTATAAGATAACACCTGCAAAGGCCACAAACCCAGTGCCACGTTGTGAGTTGGA
 TAGTTGTGAAAGAGTCAAATGGCTCTCCTCAAGCGTATTCAACAAGGGCTGAAGGATG
 CCCAGAAGGTACCCATTGTATGGGATCTGATCTGGGCCTCGGTGCACATGCTTACAT
 GTGTTAGTCGAGGTTAAAAAACGTCTAGGCCCGAACACGGGACGTGGTTTCT
 TTGAAAAAACACGATGATAATATGGGGATCCACCGGTGCCACCATGGTGAGCAAGGGCG
 AGGAGCTGTTACCGGGGTGGTGCCTACCTGGTCGAGCTGGACGGCGACGTAAACGGCC
 ACAAGTTCAGCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCCTGA
 AGTTCATCTGCACCAACCGCAAGCTGCCGTGGCCCTGGCCACCCCTCGTGACCAACCTGA
 CCTACGGCGTGCAGTGCTTCAGCCGCTACCCGACCATGAAGCAGCACGACTTCTCA
 AGTCCGCCATGCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTCAAGGACGACGGCA
 ACTACAAGACCCGCGCGAGGTGAAGTTCGAGGGCGACACCCCTGGTGAACCGCATCGAGC
 TGAAGGGCATCGACTTCAGGAGGACGGCAACATCCTGGGCACAAGCTGGAGTACAAC
 ACAACAGCCACAACGTCTATATCATGGCGACAAGCAGAAGAACGGCATCAAGGTGAAC
 TCAAGATCCGCCACAACATCGAGGACGGCAGCGTGCAGCTGCCGACCACTACCAGCAGA
 ACACCCCCATCGCGACGGCCCGTGTGCTGCCGACAACCAACTACCTGAGCACCCAGT
 CGCCCTGAGCAAAGACCCAAACGAGAAGCGCGATCACATGGTCTGCTGGAGTTGTGA
 CCGCCGCCGGGATCACTCTCGGCATGGACGAGCTGTACAAGTAAAGCGGCCGCTCGACGA
 TAAAATAAAAGATTTATTTAGTCTCCAGAAAAAGGGGGGATGAAAGACCCACCTGTA
 GGTTGGCAAGCTAGCTTAAGTAACGCCATTTGCAAGGCATGGAAAAATACATAACTGA
 GAATAGAGAAGTTAGTCAAGGTCAAGGAAACAGATGGAACAGCTGAATATGGCCAAACA
 GGATATCTGTGGTAAGCAGTTCTGCCCGGCTCAGGGCCAAGAACAGATGGAACAGCTG
 AATATGGCCAAACAGGATATCTGTGGTAAGCAGTTCTGCCCGGCTCAGGGCCAAGAA
 CAGATGGTCCCCAGATCGGGTCCAGCCCTCAGCAGTTCTAGAGAACCATCAGATTT
 CAGGGTCCCCAAGGACCTGAAATGACCCCTGTGCTTATTGAACTAACCAATCAGTT
 CTTCTCGCTTCTGTTCGCGCCTCTGCTCCCCGAGCTCAATAAAAGAGCCCACAACCC
 TCACTCGGGCGCCAGTCCCTCCGATTGACTGAGTCGCCGGTACCGTGTATCCAATAA
 ACCCTCTTGCAAGTGCATCCGACTTGTGGTCTCGCTGTTCTGGAGGGTCTCCTCTGA
 GTGATTGACTACCCGTCAGCGGGGTCTTCATTCCGACTTGTGGTCTCGCTGCCCTGG
 GAGGGTCTCTTGAGTGATTGACTACCCGTCAGCGGGGTCTCACATGCAGCATGTAT
 CAAAATTAATTGGTTTTCTTAAGTATTACATTAATGCCATAGTTGCATTAAT
 GAATCGGCCAACCGCGGGGAGAGGCAGGTTGCGTATTGGCGCTTCCGCTTCCTCGCT
 CACTGACTCGCTCGCTCGGTGTTGCGCTGCCGAGCGGTATCAGCTCACTCAAAGGC
 GGTAAATACGGTTATCCACAGAACAGGGATAACGCAGGAAAGAACATGTGAGCAAAAGG
 CCAGAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTCCATAGGCTCCG
 CCCCCCTGACGAGCATCACAAAATCGACGCTCAAGTCAGAGGTGGCAGAACCCGACAGG
 ACTATAAAAGATACCAAGGCAGTCCCGGAGGCTGGAAAGCTCCCTCGTGCCTCTCCTG
 CCTGCCGCTTACCGGATACCTGTCGCCCTCTCCCTCGGGAGCGTGGCGCTTCTCA
 TAGCTCACGCTGTAGGTATCTCAGTCGGTGTAGGTGCTCGCTCCAAGCTGGCTGTG
 GCACGAACCCCCCGTTAGCCGACCGCTGCCCTATCCGTAACATCGTCTTGAGTC
 CAACCCGGTAAGACACGACTATGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCAG
 AGCGAGGTATGTAGGCGGTGCTACAGAGTTCTGAAGTGGTGGCTAAGTACGGCTACAC

TAGAAGGACAGTATGGTATCTGCCTCTGCTGAAGCCAGTTACCTCGGAAAAAGAGT
TGGTAGCTCTGATCCGGAAACAAACACCACCGCTGGTAGCGGTGGTTTTGTTGCAA
GCAGCAGATTACGCGCAGAAAAAAAGGATCTAAGAAGATCCTTGATCTTCTACGGG
GTCTGACGCTCAGTGGAACGAAAACACGTTAAGGGATTTGGTCATGAGATTATCAA
AAGGATCTCACCTAGATCCTTAAATTAAAAATGAAGTTGCGCAAATCAATCTAAAG
TATATATGAGTAAACTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCTC
AGCGATCTGCTATTCGTTCATCCATAGTTGCCTGACTCCCCGTGTTAGATAACTAC
GATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGACCCACGCTC
ACCGGCTCCAGATTATCAGCAATAAACCAAGCCAGCCGGAAAGGGCGAGCGCAGAAGTGG
TCCTGCAACTTATCCGCCTCCATCCAGTCTATTAAATTGTTGCCGGGAAGCTAGAGTAAG
TAGTTGCCAGTTAATAGTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTGTC
ACGCTCGTGTGGTATGGCTTCATTAGCTCCGGTCCAACGATCAAGGGAGTTAC
ATGATCCCCCATGTTGTGCAAAAAAGGGTTAGCTCCCTCGGCTCCGATCGTGTCAAG
AAGTAAGTTGCCGCAGTGTATCAGTCACTCATGGTTATGGCAGCACTGCATAATTCTCTTAC
TGTCTAGCCATCCGTAAGATGCTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTG
AGAATAGTGTATGCCGCAGCGAGTTGCTCTGCCGGCGTCAACACGGATAATACCGC
GCCACATAGCAGAACTTAAAAGTGCATCATTGGAAACGTTCTCGGGCGAAAAGT
CTCAAGGATCTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTG
ATCTTCAGCATCTTACTTCACCAAGCGTTCTGGGTGAGCAAAACAGGAAGGCAAAA
TGCCGCAAAAAGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTCCTTT
TCAATATTATTGAAGCATTATCAGGGTTATTGTCTCATGAGCGGATAACATATTGAATG
TATTTAGAAAAATAACAAATAGGGGTTCCGCGCACATTTC

FIG. 11A-3

16 / 28

1-845 CMV promoter/R/U5 5' LTR
 1322 GAG ATG-ATC mutation
 850-2100 extend d ψ region
 2151-2865 GFP coding region
 2866-2894 GGGSGGG linker
 2895-2952 FMDV 2a cleavage sequence
 2953-3004 BstX1/BstX1/HinD3/Hpa1/Sal1/Not1 polylinker
 3052-3645 3' LTR
 3652-5715 pGEM backbone (pUC origin, ampR)

ATCACGAGGCCCTTCGTCTTCAAGAACAGCTTGCTCTTAGGAGTTCTAATACATC
 CCAAACCTCAAATATATAAAGCATTGACTTGTCTATGCCCTAGTTATTAAATAGTAATC
 AATTACGGGGTCATTAGTCATAGCCCATAATGGAGTTCCGCGTTACATAACTTACGG
 TAAATGGCCCGCCTGGCTGACCGCCAACGACCCCCGCCATTGACGTCAATAATGACG
 TATGTTCCCATACTAGTAACGCCAATAGGGACTTCCATTGACGTCAATGGTGGAGTATT
 ACGGTAACACTGCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCTA
 TTGACGTCAATGACGGTAATGGCCCGCCTGGCATTATGCCAGTACATGACCTTATGG
 GACTTCCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGTGCG
 GTTTGGCAGTACATCAATGGCGTGGATAGCGGTTGACTCACGGGATTCCAAGTC
 TCCACCCCATTGACGTCAATGGAGTTGTTGGCACCATAACGGGACTTCCA
 AAATGTCGTAACAACACTCCGCCATTGACGCAAATGGCGGTAGGCATGTACGGTGGGA
 GGTCTATATAAGCAGAGCTCAATAAAAGAGCCCACAACCCCTACTCGGGCGCCAGTC
 CTCCGATTGACTGAGTCGCCCGGGTACCCGTGTATCCAATAACCCCTCTGCAGTTGCA
 TCCGACTTGTGGTCTCGCTGTTCTGGGAGGGTCTCCTCTGAGTGATTGACTACCCGT
 CAGCGGGGGTCTTCATTGGGGCTCGTCCGGATCGGGAGACCCCTGCCAGGGACC
 ACCGACCCACCACCGGGAGGTAAAGCTGCCAGCAACTTATCTGTGTCTGCCATTGTC
 TAGTGTCTATGACTGATTTATGCGCCTCGTCGGTACTAGTTAGCTAACTAGCTCTGT
 ATCTGGCGGACCCGTGGAACTGACGAGTTCGGAACACCCGCCGCAACCCCTGGAG
 ACGTCCCAGGGACTTCGGGGGCCGTTTGTGGCCGACCTGAGTCAAATAACCCGAT
 CGTTTGGACTCTTGGTGCACCCCTTAGAGGGAGATATGGTTCTGGTAGGAGA
 CGAGAACCTAAAACAGTTCCGCCCTCCGTCTGAATTGGCTTGGTTGGGACCGAA
 GCCGCCGCCGCGGTCTGTCTGCTGCAGCATCGTTCTGTGTTCTGTACTGTG
 TTTCTGTATTTGTCTGAAAATATCGGCCCGGGCAGACTGTTACCACTCCCTTAAGTT
 GACCTTAGGTCACTGGAAAGATGTCGAGCGGATCGCTACAACCACTCGGTAGATGTCA
 AGAAGAGACGTTGGTTACCTTCTGCTCTGCAGAATGCCAACCTTAACGTCGGATGG
 CCGCGAGACGGCACCTTAACCGAGACCTCATCACCCAGGTTAAGATCAAGGTCTTTC
 ACCTGGCCCGCATGGACACCCAGACCAGGTCCCTACATCGTACCTGGGAAGCCTTGG
 CTTTGACCCCTCCCTGGTCAAGCCCTTGACACCCTAACGCTCCGCTCCTCTT
 CCTCCATCCGCCCGTCTCTCCCTTGAAACCTCCTCGTCAACCCGCCCTCGATCCTC
 CCTTATCCAGCCCTCACTCCTCTAGGCGCCCCATATGCCATATGAGATCTTAT
 ATGGGGCACCCCGCCCTTGAAACTCCCTGACCTGACATGACAAGAGTTACTAAC
 AGCCCTCTCTCCAAGCTCACTTACAGGCTCTACTTAGTCCAGCAGCAAGTCTGGAG
 ACCTCTGGCGGCAGCCTACCAAGAACACTGGACCGACGGTGGTACCTCACCCCTAAC
 GAGTCGGCGACACAGTGTGGTCCGCCGACACCAGACTAAGAACCTAGAACCTCGCTGG
 AAAGGACCTTACACAGTCCTGCTGACCACCCCCACCGCCCTCAAAGTAGACGGCATCGC
 AGCTTGGATAACAGCCGCCACGTGAAGGCTGCCGACCCGGGGTGGACCATCCTTA
 GACTGCCGGATCTCGAGGGATCCACCATGGTGAGCAAGGGCGAGGAGCTGTTACCGGG

FIG._ 11B-1

GTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCAGCGTGTC
 CGGCAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCCTGAAGTTCATCTGCACCA
 CCGGCAAGCTGCCGTGCCCTGGCCACCCCTCGTACCGACCTACGGCGTGAG
 TGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTCAAGTCCGCCATGCC
 CGAAGGCTACGCCAGGAGCGCACCACATTCTCAAGGACGACGGCAACTACAAGACCC
 GCGCCGAGGTGAAGTTCGAGGGCGACACCCCTGGTGAACCGCATCGAGCTGAAGGGCATC
 GACTTCAAGGAGGACGGCAACATCCTGGGGCACAAGCTGGAGTACAACACTACAACAGCCA
 CAACGTCTATATCATGGCCGACAAGCAGAAGAACGGCATCAAGGTGAACCTCAAGATCC
 GCCACAAACATCGAGGACGGCAGCGTCAGCTGCCGACCACTACCGCAGAACACCCCC
 ATCGGCGACGGCCCCGTGCTGCCGACAACCACTACCTGAGCACCCAGTCCGCCCT
 GAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCG
 CCGGGATCACTCTCGGCATGGACGAGCTGTACAAGGAATTGGAGGTGGCAGCGGTGGC
 GGTCAAGCTGTTGAATTGACCTTCTTAAACTTGCGGGAGACGTCGAGTCCAACCCCTGG
 GCCCACCAACCACCATGGAAGCTTCCATTAAATTGGTTAACGTCGACGCCGCGCTCGAC
 GATAAAATAAAAGATTATTTAGTCTCCAGAAAAAGGGGGGAATGAAAGACCCACCT
 GTAGGTTGGCAAGCTAGCTTAAGTAACGCCATTGCAAGGCATGGAAAAATACATAA
 CTGAGAATAGAGAAGTTCAGATCAAGGTAGGAACAGATGGAACAGCTGAATATGGGCC
 AACAGGATATCTGTGTAAGCAGTTCTGCCCGGCTCAGGGCCAAGAACAGATGGAA
 CAGCTGAATATGGCCAACAGGATATCTGTGTAAGCAGTTCTGCCCGGCTCAGGG
 CCAAGAACAGATGGTCCCCAGATGCGGTCCAGCCCTCAGCAGTTCTAGAGAACCATCA
 GATGTTCCAGGGTGCCCCAAGGACCTGAAATGACCTGTGCCTTATTGAACTAACCA
 ATCAGTTCGCTCTCGCTTCTGTTCGCGCGCTCTGCTCCCCGAGCTCAATAAGAGC
 CCACAAACCCCTCACTCGGGCGCCAGTCCTCGATTGACTGAGTCGCCCGGTACCCGT
 GTATCCAATAAACCTCTTGCAAGTGCATCCGACTTGTGGTCTCGCTGTTCTGGAG
 GGTCTCCTCTGAGTGAATTGACTACCCGTAGCGGGGGTCTTCATTCCGACTTGTGGT
 CTCGCTGCCCTGGGAGGGTCTCTGAGTGAATTGACTACCCGTAGCGGGGGTCTTC
 CATGCAGCATGTATCAAATTAAATTGGTTTTCTTAAGTATTACATTAAATGGC
 CATAGTTGCATTAATGAATGGCCAACGGCGGGGAGAGGGGGTTGCGTATTGGCGCT
 CTTCCGCTTCCTCGCTACTGACTCGCTCGCTCGGCTTCGGCTGCGCGAGCGGT
 TCAGCTCACTCAAAGGGTAATACGGTTATCCACAGAACAGGGATAACGCAGGAAA
 GAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGTTGCTGG
 CGTTTCCATAGGCTCCGCCCTGACGAGCATCACAAATGACGCTCAAGTCAG
 AGGTGGCGAAACCGACAGGACTATAAAGATAACCGAGGCTTCCCTGGAAGCTCCCT
 CGTGCCTCTGTTCCGACCCCTGCCGTTACCGGATACCTGTCGCCCTTCTCCCT
 CGGGAAAGCGTGGCGCTTCTCATAGCTCACGCTGTAGGTATCTCAGTTGGTAGGTC
 GTTCGCTCCAAGCTGGCTGTGACGAACCCCGTTAGCCCAGCGCTGCGCCTT
 ATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATGCCACTGGCAG
 CAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGAGGCGGTGCTACAGAGTCTTG
 AAGTGGTGGCTAACTACGGCTACACTAGAAGGACAGTATTGGTATCTGCGCTTGCT
 GAAGCCAGTTACCTCGGAAAAAGAGTTGGTAGCTTGTACCGGCAAACAAACCG
 CTGGTAGCGGTGGTTTTGCAAGCAGCAGATTACGCGCAGAAAAAGGATCT
 CAAGAAGATCCTTGATCTTCTACGGGTCTGACGCTCAGTGGAACGAAAACCTACG
 TTAAGGGATTTGGTCATGAGATTATCAAAAGGATCTCACCTAGATCCTTTAAATT
 AAAATGAAGTGTGCGAAATCAATCTAAAGTATATGAGTAAACTTGGTCTGACAGT
 TACCAATGCTTAATCAGTGAGGCACCTATCTCAGCGATCTGCTATTCGTTACCAT
 AGTTGCCTGACTCCCCGTCGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCC
 CCAGTGCTGCAATGATACCGCGAGACCCACGCTACCGGCTCCAGATTATCAGCAATA

AACCAGGCCAGCCGGAAAGGGCCGAGCGCAGAAGTGGTCCTGCAACTTTATCCGCCTCCAT
CCAGTCTATTAAATTGTTGCCGGGAAGCTAGAGTAAGTAGTTGCCAGTTAATAGTTGC
GCAACGTTGTTGCCATTGCTACAGGCATCGTGGTGTACGCTCGTCGTTGGTATGGCT
TCATTCACTCCGGTCCAAACGATCAAGGCAGTTACATGATCCCCATGTTGTGCAA
AAAAGCGGTTAGCTCCTCGGTCCGATCGTTGTACAGAAGTAAGTGGCCGCAGTGT
TATCACTCATGGTTATGGCAGCACTGCATAATTCTTACTGTCATGCCATCCGTAAGA
TGCTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATAGTGTATGCCGGCG
ACCGAGTTGCTCTGCCCGCGTCAACACGGGATAATACCGCGCCACATAGCAGAACTT
TAAAAGTGTCTCATCATTGGAAAACGTTCTCGGGGGCGAAAACCTCTCAAGGATCTTACCG
CTGTTGAGATCCAGTTGATGTAACCCACTCGTGCACCCAACTGATCTCAGCATCTT
TACTTCACCAAGCGTTCTGGGTGAGCAAAACAGGAAGGCAAAATGCCGCAAAAAGG
GAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCCTTTCAATATTATTGA
AGCATTATCAGGGTTATTGTCATGACATTAAACCTATAAAATAGGCCT

FIG. 11B-3

0996376 011602

19 / 28

1-845 CMV promoter/R/U5 5' LTR
 1322 GAG ATG-ATC mutation
 850-2100 extended ψ region
 2146-2173 two BstX1 peptide cloning sites
 2173-2214 EcoR1/Apa1/Hpa1/Not1 polylinker
 2262-2855 3' LTR
 2855-4901 pGEM backbone (pUC origin, ampR)

ATCACGAGGCCCTTCGTCTCAAGAACAGCTTGCTTTAGGAGTTCTAATACATC
 CCAAACCTAAATATAAAAGCATTGACTTGTCTATGCCCTAGTTATTAAATAGTAATC
 AATTACGGGGTCATTAGTCATGCCATATATGGAGTTCCGCGTTACATAACTACGGT
 AAATGGCCCGCCTGGCTGACCGCCAAACGACCCCCGCCATTGACGTCAATAATGACGT
 ATGTTCCCATAGTAACGCCAATAGGGACTTCCATTGACGTCAATGGGTGGAGTATTAA
 CGGTAAACTGCCCACTGGCAGTACATCAAGTGTATCATATGCCAAGTACGCCCTAT
 TGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCAGTACATGACCTATGGG
 ACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTATGCGG
 TTTTGGCAGTACATCAATGGCGTGGATAGCGGTTGACTCACGGGATTTCAAAGTCT
 CCACCCCATTGACGTCAATGGGAGTTGGCACCAAAATCAACGGGACTTCAA
 AATGTCGTAACAACCTCGCCCCATTGACGCAAATGGCGGTAGGCATGTACGGTGGGAG
 GTCTATATAAGCAGAGCTCAATAAAAGAGCCCACAACCCCTACTCGGGCGCCAGTCC
 TCCGATTGACTGAGTCCGGGGTACCCGTGTATCCAATAAACCCCTTGCAGTTGCAT
 CCGACTTGTGGTCTCGCTGTTCTGGGAGGGTCTCCTCTGAGTGTGATTGACTACCCGTC
 AGCGGGGGTCTTCATTGGGGCTCGTCCGGATCGGAGACCCCTGCCAGGGACCA
 CCGACCCACCACCGGGAGGTAAGCTGCCAGCAACTTATCTGTGTCTGTCCGATTGTCT
 AGTGTCTATGACTGATTATGCGCTGCGTCGGTACTAGTTAGCTAACTAGCTCTGTA
 TCTGGCGGACCCGTGGTGGAACTGACGAGTTCGGAACACCCGGCGCAACCCCTGGGAGA
 CGTCCCAGGGACTTCGGGGCCGTTTGTGGCCGACCTGAGTCAAATCCGATC
 GTTTGGACTCTTGGTGCACCCCCCTAGAGGAGGGATATGTGGTTCTGGTAGGAGAC
 GAGAACCTAAACAGTCCCGCCTCCGTCTGAATTGGCTTCCGGTTGGGACCGAAG
 CCGCGCCGCGCGTCTGTCTGCTGAGCATCGTCTGTGTCTGTGACTGTGT
 TTCTGTATTGTCTGAAAATATCGGCCGGCCAGACTGTTACCAACTCCCTTAAGTTG
 ACCTTAGGTCACTGGAAAGATGTCGAGCGGATCGCTACAACCAAGTCGGTAGATGTC
 GAAGAGACGTTGGGTACCTCTGCTCTGAGAATGCCAACCTTAACGTCGGATGGC
 CGCGAGACGGCACCTTAACCGAGACCTCATCACCCAGGTTAAGATCAAGGTCTTCA
 CCTGGCCCGCATGGACACCCAGACCAGGTCCCCATACATCGTGACCTGGGAAGCCTTGGC
 TTTGACCCCCCTCCCTGGGTCAAGCCCTTGTACACCCCTAACGCTCCGCTCCTCTTC
 CTCCATCCGCCCGTCTCTCCCCCTGAAACCTCCTCGTACCCGCTCGATCCCTCC
 CTTTATCCAGCCCTCACTCCTCTAGGGCGCCCCATATGCCATATGAGATCTTATA
 TGGGGCACCCCCGCCCTGTAAACTTCCCTGACCATGACAAGAGTTACTAAC
 GCCCCTCTCTCCAAGCTCACTTACAGGCTCTACTTGTGACGACGAAGTCTGGAGA
 CCTCTGGCGGCAGCCTACCAAGAACAACTGGACCGACCGGTGGTACCTCACCCCTACCG
 AGTCGGCGACACAGTGGGTCCGCCGACACCAGACTAACAGAACCTAGAACCTCGCTGG
 AAGGACCTTACACAGTCTGCTGACCAACCCACCGCCCTAAAGTAGACGGCATCGCA
 GCTTGGATACAGCCGCCACGTGAAGGCTGCCGACCCGGGGTGGACCATCCTCTAG
 ACTGCCGGATCTCGAGGGATCCACCATGGACCCCCATTAAATTGGAAATTGGGGCC
 CAAGCTTGTAAACGTCGACGCCGCCGTGACGATAAAATAAAGATTTATTAG
 TCTCCAGAAAAGGGGGAAATGAAAGACCCCACCTGTAGGTTGGCAAGCTAGCTTAAG
 TAACGCCATTTGCAAGGCATGGAAAAATACATAACTGAGAATAGAGAAGTTCAAGATCA

FIG.-11C-1

AGGTCAAGAACAGATGGAACAGACTGAATATGGGCCAACAGGATATCTGTGGTAAGCAG
 TTCCTGCCCGGCTCAGGGCCAAGAACAGATGGAACAGACTGAATATGGGCCAACAGGA
 TATCTGTGGTAAGCAGTTCCCTGCCCGGCTCAGGGCCAAGAACAGATGGTCCCCAGATG
 CGGTCCAGCCCTCAGCAGTTCTAGAGAACATCAGATGTTCCAGGGTCCCCAAGGA
 CCTGAAATGACCCCTGTGCCTTATTTGAACTAACCAATCAGTCGCTTCGCTTCTGTT
 CGCGCGCTCTGCTCCCCGAGCTCAATAAAAGAGCCCACAACCCCTACTGGGGCGCC
 AGTCCTCCGATTGACTGAGTCGCCGGTACCCGTGTATCCAATAAACCCCTTGCAGT
 TGCATCCGACTGTGGCTCGCTGTTCTGGGAGGGTCTCCTCTGAGTGATTGACTAC
 CCGTCAGCGGGGGCTTTCATTCCGACTTGTGGTCTCGCTGCCTGGGAGGGTCTCCT
 CTGAGTGATTGACTACCCGTCAAGCGGGGTCTTCACATGCAGCATGTATCAAATTAAT
 TTGGTTTTTTCTTAAGTATTACATTAATGCCATAGTGCATTAATGAATCGGCC
 AACGCGCGGGGAGAGGCGGTTGCGTATTGGCGCTCTCCGCTCCTCGCTCACTGACT
 CGCTGCCTCGGTGCTCGGCTGCGCGAGCGGTATCAGCTCACTCAAAGCGGTAAATA
 CGGTTATCCACAGAACATCAGGGATAACGCAGGAAAGAACATGTGAGCAAAGGCCAGCA
 AAAGGCCAGGAACCGTAAAAGGCCGCGTTGCTGGGTTTTCCATAGGCTCCGGCCCC
 CTGACGAGCATCACAAAATGACGCTCAAGTCAGAGGTGGCAAACCCGACAGGACTA
 TAAAGATAACCAGGCCTTCCCCCTGGAAGCTCCCTCGTGCCTCTCCTGTTCCGACCC
 GCCGCTTACCGGATACCTGTCCGCCTTCTCCCTCGGAAGCGTGGCGCTTCTCATA
 GCTCACGCTGTAGGTATCTCAGTTGGTGTAGGTCGTTGCTCCAAGCTGGCTGTG
 CACGAACCCCCCGTTCAGCCCACCGCTGCCTTATCGGTAACTATCGTCTTGAGTC
 CAACCCGGTAAGACACGACTTATGCCACTGGCAGCAGCCACTGGTAACAGGATTAGCA
 GAGCGAGGTATGTAGGCCTGCTACAGAGTTCTGAAGTGGTGGCTAACTACGGCTAC
 ACTAGAAGGACAGTATTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTCGGAAAAAG
 AGTTGGTAGCTTGTATCCGGCAAACAAACACCAGCTGGTAGCGGTTTTTTGTT
 GCAAGCAGCAGATTACCGCGAGAAAAAAAGGATCTCAAGAACATCCTTGATTTCT
 ACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAGGGATTTGGTATGAGATT
 ATCAAAAAGGATCTCACCTAGATCCTTAAATTAAAATGAAGTTGCGCAAATCAA
 TCTAAAGTATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCA
 CCTATCTCAGCGATCTGTCTATTGCTCATCCATAGTGCCTGACTCCCCGTGTA
 GATAACTACGATAACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAG
 ACCCACGCTACCGGCTCCAGATTATCAGCAATAAACCAAGCCAGCCAGCGGAAGGGCCGAG
 CGCAGAAGTGGCCTGCAACTTATCCGCCTCCATCCAGTCTATTAAATTGTTGCCGGGA
 AGCTAGAGTAAGTAGTCGCCAGTTAATAGTTGCGAACGTTGTTGCCATTGCTACAG
 GCATCGTGGTGTACGCTCGTGTATGGCTTATTAGCTCCGGTCCAAACGA
 TCAAGGGAGTTACATGATCCCCATGTTGCAAAAAAGCGGTTAGCTCCTCGGTCC
 TCCGATCGTTGTCAGAAGTAAGTTGGCGCAGTGTATCACTCATGGTTATGGCAGCAC
 TGCATAATTCTTACTGTCTGCACTGCCATCCGTAAGATGCTTTCTGACTGGTGA
 TAC TCAACCAAGTCATTCTGAGAATAGTGTATGCGCGACCGAGTTGCTCTGCCCGCGTC
 AACACGGGATAATACCGGCCACATAGCAGAACCTTAAAGTGCCTCATATTGAAAC
 GTTCTCGGGCGAAAACCTCAAGGATCTTACCGCTGTTGAGATCCAGTTGATGTA
 CCCACTCGTGCACCCAACTGATCTCAGCATTTTACTTTCAACCAGCGTTCTGGGTG
 AGCAAAACAGGAAGGCAAAATGCCGAAAAAGGAATAAGGGCGACACGGAAATGTT
 GAATACTCATACTCTTCTTTCAATATTATTGAAGCATTATCAGGGTTATTGTCTC
 ATGACATTAACCTATAAAATAGGCCT

(1) C12scFas Survival construct

C12scFas: psilon-cFas (CD95)-Ires-Hygro-BGH Polya put into C12s vector backwards so that no leaky transcription happens through the cmv promoter.

atcacgaggcccttcgtttcaagaaccagctttccataatacataccaaactcaaaataataaaagc
 atttgacttgcctatggcccttagttataatagaatcaattacggggtcattatgttcataatggaggttccg
 cgttacataacttacggtaatggccctggctgaccggccaaacgaccggccctggctcaatgggttggagtttttgc
 tttccatagtaacgcctataggactttccatgggttggatgggttggatgggttggatgggttggatgggttgg
 catcaagttgtatcatatggccaaagtacggccctatgggttggatgggttggatgggttggatgggttgg
 catggacccatggggactttccatgggttggatgggttggatgggttggatgggttggatgggttggatgggttgg
 agtacatcaatggcggttggatgggttggatgggttggatgggttggatgggttggatgggttggatgggttgg
 ttttggcaccaaaatcaacggggactttccaaatgtcgtaacaactccggccatggccaaatggccgttaggcgtatgt
 acgggtggagggtctataataaggcagactcaataaaagggccacaacccctcaactcggggccactcggccgttgcatt
 gagtcgcccgggttaccgggttgcgtttccatgggggggttcgttccgggatcggggagacccctggccagg
 tctccctctgtggatgtgattgtgacttgcgtttccatgggggggttcgttccgggatcggggagacccctggccagg
 ggaccaccggaccaccaccaccggggaggtaaagtggccaggcaacttgcgtttccatgggggggttcgttccgggatc
 tttatggccctgggtacttagttacttagttacttagttacttagttacttagttacttagttacttagttacttagtt
 caccggccggaaaccctgg
 tcgttttggaacttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 cgcctccgtctgtgaatttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 tgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 cttaggttacttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 gctctgcagaatggccaaacctttaacgtcggtcggtcggtcggtcggtcggtcggtcggtcggtcggtcg
 atcaagggtctttcacctggcccgcatggacaccaggccaggccaggccaggccaggccaggccaggccaggcc
 ccccccctccctgggtcaaggcccttttgtacacccttaaggcccttcgttccatccggccgtcttcccttgc
 aacctccctcggttcgaccggccctcgatctcccttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 gagatctttatggggcccccggcccccggcccccggcccccggcccccggcccccggcccccggcccccgg
 ccaaggctacttacaggcttcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 accggaccgggttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgcgttttgc
 cgctggaaaaggacccatcagttgcgtccgg
 cgcccacacgtggacttgcgtccgg
 TGCTATTGTCTCCCAATCCTCCCCCTTGCTGTCCTGCCACCCCCCAGAAATAGAATGACACCTACTCAGACAA
 TGCGATGCAATTTCCTCATTTATTAGGAAAGGACAGTGGGAGTGGCACCTTCCAGGGTCAAGGAAGGCCACGGGGGGGG
 GCAAACACAGATGGCTGGCAACTAGAAGGCACAGTCGAGGTCTAGCTTGCCAAACCTACAGGTGGGTCTTTCATTC
 FIG._ 12A

FIG. 12B

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FIG. 12C

1

FIGURE 12D

ପାତ୍ରିକା ୧୯୫୬ ୧୯୫୭

GAGTGGACACCTGTGGAGAAAGGCAAAGTGGATGTCAAGTAAAGCCAATAGGTGCCATTAGAGAAACGCCAGTCTCT

FIG. 13B

(2) Ahhh: Survival construct

2.) Ahhh: epsilon-cFas' (CD8 or mLyt2)-Ires-Hygro-BGHpolyA also in C12s backwards

atcacgagggcccttcgttcaagaacagcttccataatacataccaaactcaataataaagg
 atttgacttgcctatggccctagttataatagaatcaattacggggtcattagttccatagcccatatggaggttccg
 cgttacataactttacggtaatggcccttggtgaccggcccaacggccctggctgacgtcaataatgacgtatg
 ttccatagtaacggccaaataggactttccattgacgtcaatggggaggatattacggtaaaactggcccaacttggcagta
 catcaaggttatcatatggcccaaggtaacggccctattgacgtcaatgacggtaatggccctggcattatggccagta
 catgacccttatggactttcctactttggcgttacatctacggatattacgttatggatgggttgg
 agtacatcaatggccgttgcggataggcttgcactcaggggatttccaaatggcccaacttggcccaatggggtaggcatgt
 ttttggcaccaaaatcaacgggactttccaaatgtcgtaacaacttggcccaatttgcggcaatggggtaggcatt
 acgggggggggtctataaggcagactcaataaaagggcccaacttggcccaacttggcccaatggggtaggcatt
 gaggccgggggttgcgttgcggatgg
 ttcctctgtgagggtattgtgattgtgacttgcgg
 ggaccaccggaccaccgggttgcgttgcggatgg
 ttttatgcgcctgcgttgcggatgg
 caccggccgaaaccctgg
 tcgttttgactttttgtgaccccccattaggggggatattgtgtttctgttgcggccggccggccggccggccgg
 cgcctcccggtctgaattttggactttttgtgactttttgtgttttttttttttttttttttttttttttttttttt
 tggtctgtgtgtacttt
 cttaggttacttt
 gctctgcagaatggccaaaccctttaacgttgcggatggccggagacggccggccggccggccggccggccgg
 atcaagggttttacccctggccggcatggacaccggaccggccggccggccggccggccggccggccggccgg
 ccccccctgggtcaaggcccttt
 aacctccctcggttcgaccccccgttgcatt
 gagatctttatggggcccccggcccccggcccccggcccccggcccccggcccccggcccccggccccc
 ccaaggcttacttacagggttaccccttaccccttaccccttaccccttaccccttaccccttaccccttaccc
 accgaccgggttaccccttaccccttaccccttaccccttaccccttaccccttaccccttaccccttaccc
 cgctggaaaggaccccttaccccttaccccttaccccttaccccttaccccttaccccttaccccttaccc
 cgcccacgttgcggatgggttgcggatgggttgcggatgggttgcggatgggttgcggatgggttgcgg
 TGCTATTGTCTTCCCAATCCTCCCCCTTGCTGTCTGCCACCCCCCAGAAATAGAATGACACCTACTCAGACAA
 TGCGATGCAATTTCCTCATTTTATTAGGAAAGGACAGTGGAGTGGCACCTTCCAGGGTGGGTCTAGCTTGC
 GCAAAACAGATGGCTGGCAACTAGAAGGCACAGTCGAGGTCTAGCTTGCAGGGATCCTCCCCAGCATGCC

GCAAAACAGATGGCTGGCAACTAGAAGGCACAGTCGAGGTCTAGCTTGCAGGGATCCTCCCCAGCATGCC

FIG.- 13A

27 / 28

TTTGCAAGGCATGGAAAAATACATTAACGAGAACTAGAGAAGTTCAAGGTCTGGAAACAGGAAATAAA

AGAGCCACAAACCCCTCACTCGGGGCCAGTCCGATGTGACTGAGTCGGCCGGGTACCCGGTGTATCCAATAACCT

CTTGCAGTTGCAATCCGACCTTGTGCTCTCGCTGTCTTCTTGGAGGGTCTCTTGAGTGAATTGACTACCCGTCACTGGG

CATGGTCATAGCTGTTCCTGTGAAATGGTTATCCGCTCACAAACATACGAGGCCGGAAGCTATAAGTGT

AAAAGGCCCTGGGGTGGCCTAATGAGTGAAGCTAACATTAATTGCCGTTCCAGTGGGAAACCT

GTCTGTGCCAGGTGGCAATTAATGAACTCGGCCAACGCCCCGGGGAGAGGGCCGGTTGGGTATTTGGCCCTTCTCTCTCC

GAATCAGGGAATAACGGTAGGAAAGGAACATGTGAGCAAAAGGCCAGGAACCGTAAAAAGGCCAGGCTTGGCT

GGCGTTTTCCATAGGCTCCGGCCCCCTGAGGAGCATACAAAATGACGGCTCAAGTCAGAGGTGGCCGAAACCCGACAG

GA
CT
AT
AA
AG
AT
AC
CA
GG
CC
TT
CC
CT
GG
AA
GC
CT
CC
CT
GG
CC
CT
GG
AT
AC

CTGTCTCCGCCCTTCTCCCCCTGGGAAAGCCTGGGGCTTTCTCATAGCTCACCGCTGTAGGTATCTCAAGTTCGGTGTAGGTCT

TCGCTCCAAGCTGGCTGTGTGCAAGAACCGTTAGGCCATTATCCGGTAACTACTGTCTTGACT

CCAACCCGGTAAGACAGGACTTACTGGCCACTGGCAAGCCACTTGGGTTACAGGATTAGCCAGAGCTTATGTAGCCGT

FIG. 13C

GCTACAGAGTTCTTAAGTGGTAGCTTAACTACGGCTAACACTAGAAGGACAGTATTGGTATCTGGCTCTGCTGAAGCC
AGTTACCTCGGAAAGAGTTGGTACGGCTAACACTACGGCTAACACTAGAAGGACAGTATTGGTATCTGGCTCTGCTGAAGCC
AGCAGGAGATTACGGCGAGAAAAAGGATCTAAGAAGATCCTTGTACGGGCTCTACGGGCTGACGGCTCAGTGGAAC
GAAAACCTACGTTAAGGGATTGGTCAATGAGATTATCAAAAGGATCTCACCTAGATCCTTAAATTAAAATGAAG
TTTGGCCTAAAGTATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCACCTATCT
CAGCGATCTGTCTATTTCGTTCATCCATAGTTGCCTGACTCCCCGTCGTAGATAACTACGATACTGGAGGGCTTACCA
TCTGGCCCAAGTGTGCAATGATACCCGGAGACCCACGGCTCACCGGCTCCAGATTATCAGCAATAAAACGCCAGCGG
AAGGGCCGAGCCAGTAATAGTTGGCIAACCTTATCCGCCCTCCATCCAGTCTATTAAATTGTTGCCGGIAGCTAGAGTAA
GTAGTTGCCAGTTAACTGGCTCAGTGGTACGGCATCGTGGTCACTGGCTCGTGTGTTGGTATGCTCCT
GCTTCATTCACTCGGTTCCAAACGATCAAGGGAGTACATGATCCCCCATGTTGTGCAAAAAGGGTTAGCTCCT
CGGTCTCCGATCGTTGTCAGAAGTAAGTGGGGCAGTGTATCACTCATGGTTATGGCAGGACTGCATAATTCTCTTA
CTGTCATGCCATCCGTAAGATGCTTTCTGTGACTGGTGAGtactcaaccaagtcatctgagaatagtgtatggggcga
ccggattgtctttgggggtcaacacgggataataccggccacatagagaactttaaaagtgtatcattggaaa
acggttttcggggcggaaactctcaaggatcttacccgttgcgttgcacccactcgtgtgggttgcacccaaact
gatcttcaagcatctttactttccaggcgttcttgcataactcttcgggttcaatatttgcattttttcaatatttgcatt
aggccgacacggaaatgttgcataactcttcgggttcaatatttgcattttttcaatatttgcattttttcaatatttgcatt
gacattaaacctataaaaaataggcggt

FIG. - 13D